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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,944

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Martin F. Bachmann

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26111

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08/19/2009

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EXAMINER

LE, EMILY M

ART UNIT

PAPER NUMBER

1648

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,944	<b>Applicant(s)</b> BACHMANN ET AL.	
	<b>Examiner</b> EMILY M. LE	<b>Art Unit</b> 1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04/17/09+05/01/09.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,10,14-16,33,34,41,47,48,50,52-55,57,63 and 64 is/are pending in the application.
- 4a) Of the above claim(s) 57 and 63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 5, 10, 14-16, 33-34, 41, 47-48, 50, 52-55, and 64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 3-4, 6-9, 11-13, 17-32, 35-40, 42-46, 49, 51, 56 and 58-62 are cancelled. Claim 64 is added. Claims 1-2, 5, 10, 14-16, 33-34, 41, 47-48, 50, 52-55, 57 and 63-64 are pending. Claims 57 and 63 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 07/18/2008. Claims 1-2, 5, 10, 14-16, 33-34, 41, 47-48, 50, 52-55, and 64 are under examination.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1-2, 5, 10, 14-16, 33-34, 41, 47-48, 50, 52-55, and 64 rejected under 35 U.S.C. 102(a) as being anticipated by Bachman.<sup>1</sup>

In response to the rejection, Applicant submitted Bachmann and Schwarz declaration under 37 C.F.R. 1.132 to disqualify the cited reference as prior art as it is no longer by "others".

Applicant's argument, along with the declaration, has been considered, however, it is not found persuasive. While the declaration establishes that Bachman and

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<sup>1</sup> Bachmann et al. U.S. PreGrant Publication No. 2003/0099668 A1, published May 29, 2003.

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Schwartz are coinventors for the instant patent application and the cited prior art, it remains that the reference is by others. Maurer, Tissot, Meijerink, Lipowsky, Pumpens, Cielens and Renhofa are also inventors of the cited prior art. Therefore, the rejection is maintained.

The claims are directed to a composition comprising a virus like particle (VLP) with an immunostimulatory nucleic acid packaged within the VLP, an antigen mixed with or coupled to the VLP, and at least one toll-like receptor (TLR) ligand, wherein the ligand and immunostimulatory nucleic acid activate different TLR. Claim 2, which depends on claim 1, requires the ligand to be mixed with said VLP. Claim 5, which depends on claim 1, requires the ligand be a ligand for TLR 4. Claim 10, which depends on claim 1, requires that the immunostimulatory nucleic acid be an unmethylated CpG oligonucleotide. Claim 14, which depends on claim 10, requires that the oligonucleotide is part of a palindromic sequence. Claim 15, which is interpreted to depend on claim 14, requires the palindromic sequence to be GACGATCGTC. Claim 16, which depends on claim 10, requires the oligonucleotide to comprise the sequence: GGGGGGGGGGACGATCGTCGGGGGGGGGG. Claim 33, which depends on claim 1, requires the immunostimulatory nucleic acid to be an unmethylated CpG oligonucleotide and that the ligand be a ligand for any one of TLR 1-8 and 10-11. Claim 34, which depends on claim 33, requires that the ligand be a ligand for TLR 4. Claim 64, which depends on claim 34, requires that the ligand be LPS or a derivative thereof. Claim 41, which depends on claim 1, requires that the VLP comprises recombinant proteins or fragments thereof, of a RNA-phage, wherein said RNA-phage is

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bacteriophage QB or bacteriophage AP205. Claims 47 and 52, which depends on claim 1, requires the antigen to be selected from the group consisting of pollen, dust, dust mite, fungal, mammalian epidermal, feather insect, food, hair, saliva and serum extracts. Claim 48, which depends on claim 1, requires the antigen to be selected from the group consisting of viruses, bacteria, parasites, prions, tumors, self-molecules, non-peptidic hapten molecules, allergens and hormones. Claim 50, which depends on claim 1, requires the antigen be a tumor antigen selected from the group consisting of Her2, GD2, EGF-R, CEA, CD52, human melanoma protein gp100, human melanoma protein melan-A/MART-1, tyrosinase, NA17-A nt protein, MAGE-3 protein, p53 protein, HPV16 E7 protein, an analogue of any of the listed antigens and antigenic fragments of any of the listed antigens. Claim 53, which depends on claim 1, requires the antigen to be an allergen selected from the group consisting of trees, grasses, house dust, house dust mite, aspergillus, animal hair, animal feather, bee venom, animal products and plant products. Claim 54, which depends on claim 1, requires the antigen be selected from the group consisting of bee venom phospholipase A2, ragweed pollen Amb a 1, birch pollen Bet v I, white faced hornet venom 5 Dol mV, house dust mite Der p 1, house dust mite Der f 2, house dust mite Der 2; dust mite Lep d; fungus allergen Alt a 1; fungus allergen Asp f 1; fungus allergen Asp f 16 and peanut allergens. Claim 55, which depends on claim 1, requires the antigen to be a cytotoxic T cell epitope, a Th cell epitope or a combination of at least two of said epitopes, wherein said at least two epitopes are bound directly or by way of a linking sequence.

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Bachmann et al. teaches a composition comprising a virus like particle (VLP) with an immunostimulatory nucleic acid packaged within the VLP, an antigen mixed with or coupled to the VLP, and at least one toll-like receptor (TLR) ligand, wherein the ligand and immunostimulatory nucleic acid activate different TLR. [Entire disclosure and claims 1-2, 5, 21, 57-59 and 63, in particular.] The ligands that Bachmann et al. teaches are ligands for TLR 4, including lipopolysaccharide and lipoteichonic acids. Bachmann et al. also teaches mixing the ligand with the VLP. The immunostimulatory nucleic acid Bachmann et al. teaches include unmethylated CpG oligonucleotides comprising the sequence: GGGGGGGGGGGGACGATCGTCGGGGGGGGGGG, which has the palindromic sequence GACGATCGTC. The VLP that Bachmann et al. teaches comprise recombinant proteins or fragments thereof, of a RNA-phage, wherein said RNA-phage is bacteriophage QB or bacteriophage AP205.

The antigens that Bachman et al teaches include Her2,GD2, EGF-R, CEA, CD52, human melanoma protein gp100, human melanoma protein melan-A/MART-1, tyrosinase, NA 17-A nt protein, MAGE-3 protein, p53 protein, HPV16 E7 protein, allergens such as dust mite, bee venom phospholipase A2, birch pollen Bet v I, prison, viruses, bacterial, tumors, self-molecules, parasites, non-peptidic hapten molecules, allergens, hormones; cytotoxic T cell epitopes, and Th cell epitopes, or a combination of at least of the two epitopes, wherein said at least two epitopes are bound directly or by way of a linking sequence.

In the instant case, Bachmann et al. teaches the claimed invention. Therefore, Bachmann et al. anticipates the claimed invention.

***Double Patenting***

4. The terminal disclaimers filed have been approved.

***Conclusion***

5. No claim is allowed.
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EMILY M. LE whose telephone number is (571)272-0903. The examiner can normally be reached on Monday - Friday, 8 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol can be reached on (571) 272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Primary Examiner  
Art Unit 1648

/E. M. L./  
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